Manual

mySLAVE®

Before using MySlave make sure to read safety instructions and manual in question.

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This manual replaces all preceding ones. Technical changes are possible.

All prices on ordering sheets are in Euro (gross without tax),
applicable on all delivery “ex factory “ (EXF), excluding packaging.

For general business guidelines see our web site.

Heidelberg, March 2015

Lifestyle traction device for manual wheelchairs

MySlave is a mini-traction device for wheelchairs. Its purpose is to support its user on longer, primarily flat roads. With its low weight and small, compact size it is ideal for traveling, including inner-city tours, narrow alleys and public buildings.

The device was built for in- and outdoors. It is extremely robust. With its 165mm inch front wheel it is capable to manage lighter gravel and uneven road surfaces. Yet, with daily life offering various challenges, this manual intends to provide information and useful help how to make the most of your MySlave, what it easily can do for you, what you will need practice for, and what to avoid. This manual is for you.

For inquiries regarding MySlave our team of experts is available to assist you Mondays through Fridays, 9.00 am – 6 pm. Do not hesitate to call. Your feedback is welcome.

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1. Advice and safety features

Congratulations for having selected MySlave Rehability's traction device. We appreciate your trust in our product. For more information how to use it, including photo and video material regarding lifestyle and excursions, check out our homepage (www.rehability.de) or visit us on YouTube (Rehability GmbHundCoKG).

1.1. Advice

Please thoroughly read this manual concerning MySlave before using device. This manual contains relevant information how to best maintain traction device, as well as safety features on how to best avoid accidents. It tells you how to keep MySlave in optimal working condition. Your retailer offers anything you may need with regard to potential replacement. We therefore recommend that you follow the maintenance plan recommended for MySlave by your retailer. This manual goes along with the pulling device and in case of sale, needs to be transferred to new owner. In the context of product improvement, Rehability reserves the right to remove, change or add information.

The device meets product requirements, norms and standards by EU as confirmed in the corresponding certificate of conformity.

Retail advice:

Always include this manual when handing out MySlave to buyer. Make sure to draw attention of buyer to safety features. D o n o t d e l i v e r MySlave without manual!

1.2. Safety features

Important information to avoid accidents:
The following information is for your own safety.
Please read carefully before commissioning MySlave!

- MySlave has been approved for a maximum speed of 6 km/h, or 14,8 km/h. We advise not to exceed this speed limit.
- On a downward slope, we recommend to use significantly lower speed to slow down safely in every circumstance.
- The maximum added weight for MySlave lies at 100 kg. Make sure to consider maximum added weight indicated by wheelchair manufacturer. If indicated lower than 100 kg, the lower number in question applies.
- To prevent accidents, always keep both hands at steering wheel when driving and putting on the brakes.
- When driving at dawn and night, always make sure to be using optimal lights. Attach rear light(s) on back tubes or on rear side cover of wheel chair. Before driving, always check batteries of all lights and make sure to recharge / replace in time.

- Avoid driving across curbs that may be too high to prevent **tipping** and reduce danger of tipping. Lower curbs with a height up to 3 cm maximally must slowly be passed in a right angle.
- Adjust your driving style to degree of disability. Particularly, when on a lateral slope go slowly and carefully. For slim wheelchairs with low cambers, the risk for tipping is particularly high. To reduce danger of tipping we recommend a wider lane, which can be reached when using 3° cambers. Beware that these cambers will add to the external width of your wheelchair. (10 mm per 1° on each side) in the lower area.

<u>The following safety features should be checked before each and every trip.</u>

- Regularly check pressure of tires on wheelchair. Air pressure of drive wheels on wheelchair = guidelines provided by manufacturer.
  For exact data and numbers, see information printed on built-in tires.
  A too low air pressure increases risk to tip over, particularly in curves!
- Inspect all components, particularly all screws whether they sit tight. This especially concerns the four cross tube screws of adapter unit. They need to be checked diligently, and if necessary be tightened to prevent contortion. For exact numbers regarding torque, see attached list.
- Check handlebar tube and pull tight if necessary.
- Make sure drive wheel has been aligned to the center of wheelchair. Wheel needs to be exactly at the center, in the middle of drive lane of wheelchair. Diversions of up to 1 cm from the center are permitted. To be sure, this should be measured. A misaligned drive wheel can lead to accidents if wheelchair is not heading straight. At the same time, accidents may also result from increased risk to oscillate.

The save handling of a wheelchair/MySlave-tandem requires experience and training.
Especially for beginners, slow and careful driving is imperative.
At the beginning, avoid mountainous terrain and difficult roads until you are fully familiar with how MySlave functions and operates.

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2. Driving

When attaching MySlave to your wheelchair, your four wheelchair turns into a tricycle with all corresponding advantages and disadvantages.
Especially when driving curves, a tricyle –based geometry is significantly less stable than driving with a regular wheelchair would be!
It is important to keep this in mind and to get used to the MySlave /wheelchair-tandem first.

This means: **Avoid jerky and unpredictable steering moves!!**

- How fast you drive MySlave depends on every single traffic situation in question.

Beware:

- Acceleration of MySlave should allow slowing down safely in any given situation!
- Especially in curves and if sight is limited, drive carefully while bending upper body slightly toward the inner side of curve (like when riding a bike); otherwise risk to tip over increases.
- In case of significant instability of torso, torso directors are a must. Adjustments can be made with the help of dynamic / static units for one's back.
- If stability of torso is too low, use of MySlave is impossible.
- Reduce speed when changing from going uphill to driving onto flat territory and when changing from flat territory to going downhill

Following maneuvers should be avoided when using MySlave:

- Driving across multiple steps and stairs (Risk to fall).
- Heading diagonally across curbs (Risk to fall).
- Turning on sloping / precipitous streets (Risk to fall).
- Erratic steering moves (Risk to fall).
- Abruptly hitting the brakes (Risk to fall).
- Forcefully hitting the brakes on wet surface (Risk to fall).

A double-sided (back pose) steering allows for going straight. Negative cambers on back wheels of wheelchair considerably increase overall stability.
A normal dry road surface allows for managing slopes of up to approximately 12% (depending on the positioning of drive wheels on wheelchair!)
To effectively thwart off by-turning of drive wheel, you have the option to use a cushioned wheelbase extension (GRV). You may want to have your retailer look into this!
You can considerably increase traction by bending upper body forward when going uphill or when driving on a wet surface.

3. Purpose

MySlave is a mini-traction device for wheelchairs. Its purpose is to support its user on longer, primarily flat roads. With its low weight of just 8,4 kg (basic, mobile device) and low packaging measurements it is ideal for traveling, including inner-city tours, narrow alleys and public buildings. Particularly in places where space is limited, such as in shopping centers / malls or in administrative buildings, it is easily usable given its maneuverability.

Attach your device easily to the front of your wheelchair. With the help of an electrically driven wheel, MySlave is capable to pull a number of manual wheelchairs.

Our product does not change, nor alter, the basic features and functions of your wheelchair. Any advantages a manually driven wheelchair may offer, remain.

MySlave allows easy commissioning and operation by any wheelchair driver. The device will empower its owner to maneuver around in her / his own surroundings more independently. Such added flexibility and mobility cannot be attained by a manually driven wheelchair.

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4. Description of MySlave

MySlave comes with a propulsion unit, which – given its U-shaped frame – is easily adaptable to a variety of wheelchairs. You can attach the individually configurable adapter of MySlave directly to front tubes of wheelchairs with integrated foot pegs.

For wheelchairs with removable foot pegs we recommend to use a cranked adapter unit. This will allow for simpler adjustment of MySlave, at a higher point.

A coupling technology especially designed for MySlave will automatically lift steering wheels by approximately 30-40 mm to then position them. Your wheelchair will now be in a position to be pulled or to be moved backward with reduced speed.

The U-shaped adapter unit is perfectly adjustable to the width of your wheelchair. The same applies to the angle of frame concerning front frame tubes / feet handles. Tilt of adapter unit follows from required leg freedom (>30mm) of wheelchair steering wheel.

This guarantees individual adaptation to wheelchair in question.

The multifaceted adjustability of complete propulsion unit makes switch to other tested wheelchair models possible.

(See attached overview.)

This may require an exchange of mounting blocks / main mount, and in case of change of width the replacement of U-handles.

Given the circumventing frame construction of adapter unit, lower legs and feet of driver will be optimally safeguarded and protected.

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Motor of hubs is located in drive wheel. A reloadable battery pack sustains it.

MySlave offers 4 speed levels and a throttled reverse gear.

Within the individual speed levels you can smoothly manage speed with the help of an integrated piloting from 0–14,8 km/h with the help of a rotary gas-driven handle.

With the help of a special lock battery can be taken off / replaced without tools.

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5. Attaching / mounting MySlave to your wheelchair

Once adapter and coupling unit have been adjusted to wheelchair, MySlave can be fitted to any wheelchair in 5 easy steps.

- Lock parking brake of wheelchair.
- Adapter blocks need to be parallel, freely accessible and clean of dirt. Set resting bolts on ‚open'.
- Place adapter unit parallel in front of adapter blocks and move into adapter blocks until end point.
- Resting bolts will be locked when turning them by 90°. They thus secure adapter unit in receptor blocks. IMPORTANT! Both bolts have to be completely taken in!
- Now attach MySlave to ball receptor of coupling element on adapter unit.

Now press and move forward steering knob / keeping stem centered, front wheels will lift up from ground. Sustain pressure, until resting bolts fully lock.

1.
2.
3.
4.
5.

6. Removing from wheelchair

- Lock parking brakes of wheelchair.
- Use head of handlebars to push MySlave slightly away from body in forward direction; doing so will relieve pressure on lower resting bolts of coupling element.
- Move release handle / release button of coupling element forward.
- Now release front wheels of wheelchair onto ground.
- MySlave then can be fully detached from wheelchair and be stored.
- Finally turn resting bolts of reception blocks until they are fully open, so that adapter unit can be removed from wheelchair.

7. Composition of wheelchair

MySlave may be mounted, fitted to a wide range of different wheelchairs.
Wheelchairs however need to be in excellent technical condition.
You can use foldable wheelchairs, as well as wheelchairs with inflexible frame. Inflexible frame wheelchairs generally tend to be better equipped to carry more weight given that width of seats is wider.
We offer cranked adapter units for wheelchairs with removable foot pegs.
Still, wheelchairs with removable foot pegs are generally less suitable. If your wheelchair is not on the list of tested models, it is likely, manufacturer will test and double-check suitability / feasibility.

- Both parking brakes of wheelchair need to be in excellent condition, as well as operable to be able to attain additional braking power / capacity when needed. .

8. Adjusting mySlave

It is technically possible to adjust MySlave to any wheelchair that has been marked as apt, fitting, wel-lsuited.
Installation and set-up depends on user. Set-up is required only once. After initial set-up MySlave only needs to be attached or removed. There are no additional set-up requirements.

8.1. Fitting adapter unit to width of wheelchair

Put both steering wheels in forward direction onto a reference plane elevated by 35-40mm (MDF) or onto wood strips .Close parking brakes of wheelchair.

Both adapter blocks need to be attached to lower frame tube. Make sure to securely tighten both parts while using 4 allen screws M6. Insert end bolts and tighten*.

Shorten U-shaped arc 1 and 2 with the help of pipe cutter to indicated length**. Deburring*.

Clean and remove grease on end bolts and pipes in selected position. Use enclosed glue unit while maintaining (curing) time period provided by user manual.

Both U-shaped arcs need to be attached to each other at the center and head on twice (using cable ties in question).

Mark U-shaped arcs in the middle, (with gaps of 3mm in total), cut symmetrically to measurement as indicated with tube cutter. Deburring*.

Move clip to attach adapter unit to frame onto U-shaped arc, align horizontally in a symmetric fashion and solidly pull tight, using 4 allen screws M6.

Engage MySlave and lower drive wheel toward and onto floor.

Pull all allen screws tight/adapter blocks/Pull tight all allen-grub screws (2x M6) of frame clip with torque.

**To be completed by professional workshop!*

***Depending on space required by user/shinbone/ankle of feet should not constantly be in touch with U-shaped arcs. Please consider usually recommended positioning of feet!*

8.2. Aligning drive wheel to wheelchair

On flat territory MySlave should be driven with a secured adapter unit. Allen screws M6 of frame clip are losely tightened, to make sure propulsion unit may be moved to the side.

Always make sure drive wheel has been aligned in straight position.

Wheel needs to be positioned exactly in the middle, at the centre of drive lane. Diversion of up to 10mm from centre is permitted. When double-checking do not use footboard as basis for assessment! A misaligned drive wheel can lead to accidents if wheelchair is not going straight and due to risk of oscillation. Before each and every tour, make sure that drive wheel is still positioned at the center.

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9. Commissioning of MySlave

All components of MySlave need to be checked whether they sit tight properly and are in a right position. Cables are not supposed to impair and interfere with steering. Therefore, they should be attached closely to frame. None of these components should be damaged.
Battery ideally always should be fully recharged. For your first drive and tour, ideally choose a road with less traffic before you are fully accustomed to handling of electric drive.

Start/Drive:
Activate / initiate battery. Turn on and off device with help of ON/OFF button on display.
Select drive speed 1.
To speed start turning rotary gas handle.

Speed levels:
You can easily select among 4 speed levels while pressing the arrow buttons.

Using reverse gear / changing in opposite direction:
If simultaneously pressing the on- and off-button plus the arrow button pointing down / South. This will initiate, jump start reverse gear. Consequently, LED light # 1 on the left side will flash (only if completely standing still). By pressing on-/off button one more time plus the arrow button pointing up / North (will only start if standing completely still), direction will be changed again and wheelchair will be heading in forward direction.

End of drive / halting:
Keep on- and off button pressed for a longer while. Display will turn off. You may eventually have to remove battery to turn it off by pressing corresponding switch on battery.

Lever of brake / brake lever:
The lever of brake disposes of an electric contact breaker. Pulling corresponding lever will shut down the electronic system. It will be automatically reinitiated once lever will not have been used anymore.

10. Battery of MySlave

The replaceable battery is located in central mount above motor of wheel hub.

You may recharge battery with the help of an enclosed 230 V standard charger.
For recharging you may remove battery and e. g. conveniently recharge battery in your flat. Recharging of battery while still attached to MySlave also is possible.

10.1. Displaying battery capacity

Available battery reach will be displayed above lights when pressing the corresponding button.

10.2. Energy supply

MySlave possesses a 36 volt lithium-ions based battery.
Battery does not come with a so-called memory effect and thus can be recharged without risk. Therefore, it is not necessary to 'drive battery until empty'. Always dispose of batteries at pre-assigned sites. Batteries are wear and tear items. There is a 12 months warranty in question.

- Charge battery before usage.
- Attach battery tightly to holder in question.
- Switch on battery, activate / initiate display and MySlave is operational.
- Always switch off battery in case MySlave is not going to be used for a longer period of time.
- Use battery for temperatures from -10°C up to 40°C. If temperature is lower or higher, time span of energy supply may be correspondingly shorter.
- For MySlave to be kept, stored outside of the house for a longer period (though covered), battery should be removed to protect from impact of rain and sun.
- Keep / store battery in a cool(er), dry room with fresh or well-circulated air, temperature ranging from 15°to 25°C.

Warning

- If you realize that battery may overheat or have overheated, be leaking, deform, secrete odors or fume, stop using the battery immediately!
- Only use the original charger to recharge battery.
- Keep battery away from heaters, other hot items, including microwaves, ovens and high pressure containers that may damage battery. Store away battery from children at all times.
- If storing battery away for a lengthier period, we recommend to charge battery by up to 30% - 50% of its overall capacity, representing 2-3 LEDs. A battery that is completely empty should be recharged directly once having been used.
- In case battery or charger are defunct / dysfunctional, please return at your earliest convenience for immediate repair / replacement. Do not open casing of battery or adapter, to avoid risking to damage internal parts of device. Warranty will be voided once battery or adapter have been opened.

10.3. Removal of battery

To remove battery turn keys counterclockwise and fold battery in forward direction. Battery can now be removed, taken out and replaced.

Attention / handle with care!
Always make sure before driving that battery will completely have locked in, as well as to have removed the key; Otherwise battery could get lose when driving.

10.4. Charger and charging of battery

Always double-check if voltage on power outlet matches voltage permissible for your charger! The voltage permissible when connecting chargers to power outlets is marked on nameplate of your charger. For Europe this is 100-240V / 50-60Hz.

Outside of EU appropriate chargers should be used in accordance with national regulation. (See details on charger/installation of battery)

At all times try to avoid mechanically damaging device (risk of explosion!). Do not recharge battery in proximity of inflammable items. And do not cover charger with any item.
When charging within the area of EU, only the charger supplied on delivery should be used.

Beware!
The same applies for extension cables – always handle with care. Charger should only be used indoors. Avoid exposure of charger to water or humidity. In case of sudden change in temperature from cold to warm, condensation may result. In the latter case, please wait for charger to attain warmer room temperature prior to connecting charger with power plug. Try to prevent such situations while keeping / storing charger where device is being charged.

Keep all items away and out of vents to prevent electrical shock. Pull the plug on charger once charging has been completed.
Protect charger from potential blows. In case of potential damage, e. g. after falls, bring to your retailer to make sure it is being double-checked, tested – even if externally no apparent damage may be visible.

Charger needs to remain out of reach for children!
It is forbidden to manipulate charger and battery. Manipulation will lead to all warranty being voided. Charger should only be used together with the battery supplied on delivery.

11. Maintenance

To be able to keep enjoying MySlave for a long time, regular and diligent maintenance is a must. Prior to each maintenance, check all mechanical connections. Make sure all electrical connectors are safely connected. Prior to each and every single ride, make sure to examine efficiency of manual drum brake(s).

Mechanical components:
As a general guideline, all screws on non-removable components need to be pulled (Allen key SW6).
Tighten grub screws of adapter unit with particular care to avoid twisting of adapter unit.
The specific torque required for individual screw connections can be taken from corresponding torque list in enclosures to this manual.

Electrical components:
Regularly double check all cables for visible, external damage. Make sure plugs connect safely. Damaged plugs need to be replaced.

Maintenance intervals:

Maintenance should occur each and every 500 km, at least twice a year and include the following technical parts.

- Drive wheel: test for external damage. Worn-out propulsion unit needs to be replaced.
- Nuts of axles and shafts as well as connections of screws within the adapter unit need to be examined and possibly pulled tight.
- Lining of brakes needs to be checked for wear and tear. Connections of brake cylinders should be examined and pulled tight as well if necessary.
- All screws of U-shaped frame / handle require checking and potentially being tightened.
- Resting bolts and dampers for steering ought to be cleaned and checked regarding maneuverability.
- Open and close resting bolts – while double checking for convenient mobility / maneuverability. Lightly greasing resting bolts.

Advice when using MySlave close to the sea and shore (salty air)

Salty air on shore lines need to be taken into consideration when using MySlave close to the sea, ocean. To avoid corrosion of the frame and among components (motor, brakes etc.), you need to make sure to clean frame and components with clean water, washing away remnants or particles of salt water.
For that purpose, use a sponge and warm water and carefully remove any salt water particles from MySlave.
For cleansing, we recommend the use of Sonax bicycle cleaning liquid / soap. Once done, spray all metal components, screws with Sonax care oil to safequard against corrosion.
Beware! Do not spray onto rubber components or plastic! Handle with special care when washing to make sure no water enters steering components.

12. Transportation

MySlave has been designed and developed to be carried on and transported by a wide range of vehicles. It fits into almost every trunk.

It is generally important to keep in mind:
The traction device should always be transported in de-coupled fashion!

Our batteries are protected against leaking. They should always be safe for transportation.
Just secure MySlave against sliding / moving around when being transported..

13. Enclosures / appendix

- List of features
- Other items / others